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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,062	04/28/2005	Tadaaki Tanimoto	TAM-104	3125
24956 7590 08/20/2008 MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C. 1800 DIAGONAL ROAD SUITE 370 ALEXANDRIA, VA 22314				
EXAMINER SANDOVAL, PATRICK				
ART UNIT		PAPER NUMBER		
2825				
MAIL DATE		DELIVERY MODE		
08/20/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/533,062

**Applicant(s)**

TANIMOTO ET AL.

**Examiner**

PATRICK SANDOVAL

**Art Unit**

2825

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE-08)  
Paper No(s)/Mail Date 5/12/2008, 6/19/2008
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Applicant's amendment to 10/533,062 filed on 4/9/2008 has been examined. Claims 1 and 6 are amended. Claims 5 and 7 are cancelled. Claims 1-4 and 6 are pending.

***Response to Amendment***

2. Applicant's arguments and claim amendments, see Remarks pages 5-7, filed 4/9/2008, with respect to the rejection(s) of claim(s) 1-4 and 6 have been fully considered and are persuasive. Therefore, the rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of previously applied prior art references Bowen and Hines, and newly discovered prior art reference Panchul et al. (US2001/0034876). Applicable rejections are incorporated herein.

***Information Disclosure Statement***

3. The information disclosure statement filed 5/1/2008 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. Foreign patent document not submitted is by H. Okewatari (AR).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-4 and 6 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Bowen (US 6,691,301) in view of Panchul et al. (US2001/0034876), further in view of Hines (2005/0246682).

6. **Pursuant to claims 1 and 6**, Bowen discloses:

inputting program descriptions which define a plurality of devices by employing a program language capable of describing parallel operations (Bowen, Col. 1, ll. 47-61, Col. 9, ll. 63-67 – Col. 10, ll. 1-43);

converting the input program descriptions into an intermediate expression (Bowen, Col. 44, ll. 25-55, compile Handel-C to VHDL);

generating parameters which satisfy a real-time restriction, for the intermediate expression (Bowen, Col. 9, ll. 55-67 – Col. 10, ll. 1-11, requirements, Col. 229, ll. 9-51, behavioral description and varying parameters); and

synthesizing circuit descriptions which are based on a hardware description language (Bowen, Col. 44, ll. 25-55, compile Handel-C to VHDL, RTL synthesis), on the basis of the generated parameters (Bowen, Col. 229, ll. 9-51, behavioral description and varying parameters);

wherein the program descriptions define the devices on a single bus by using a run method of the program language (Bowen, Col. 10, ll. 22-44, high-level language abstractions or models, wherein features include ability to define a bus);

wherein in the run method, program codes which are to be executed in a thread constituting a multi-thread are described (Bowen, Col. 25, ll. 44-52, wherein Handel-C is a parallel language allowing parallel thread implementation).

7. Bowen does not disclose:

wherein the program language employed is a Java program language; and  
defining clock synchronizations of the device by using barrier synchronizations.

8. Panchul discloses algorithmic representation of preliminary hardware design in high-level language such as Java (Panchul, Paragraphs 22, 112) with parallel processing of functions (Panchul, Paragraphs 62-63, 152).

9. Hines discloses defining clock synchronizations of devices by using barrier synchronizations (Hines, Paragraphs 255-261).

10. It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to substitute any standard C-type programming language such as Java, ANSI C, C++, etc. with the high-level language as taught by Bowen for flexibility amongst designers/programmers

11. It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to incorporate barrier synchronizations of Hines in order to enforce synchronization of activities (Hines, Paragraphs 255-261).

12. **Pursuant to claim 2**, Bowen in view of Panchul et al., further in view of Hines discloses wherein an intermediate expression is a member selected from the group consisting of a concurrent control flow flag, a temporal automaton with a concurrent

parameter, and a temporal automaton with parameters (Hines, Paragraphs 649–673, behavioral automata to avoid hazards through the use of built-in causality semantics).

13. **Pursuant to claim 3**, Bowen in view of Panchul et al., further in view of Hines discloses wherein parametric model checking is performed for the parameter generation (Bowen, Col. 83, ll. 15-59, compile-time or run-time checking).

14. **Pursuant to claim 4**, Bowen in view of Panchul et al., further in view of Hines discloses wherein the real-time restriction is given by RPCTL (Hines, Paragraphs 198-205, runtime constraints, runtime algorithms).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Sandoval whose telephone number is 571-272-7973. The examiner can normally be reached on 8:00 am to 5:30 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patrick Sandoval/

Examiner, Art Unit 2825

/Vuthe Siek/

Primary Examiner, Art Unit 2825